AT&T Mobility

75-0738-01/968867P

85 horsepower diesel-fired, emergency generator engine.

Model	Model yr	^br-hp	*KW	^MMBtu/hr	NSPS regulation (40 CFR X)	MACT?
John Deere 4045TF280	2014	85	63.3743	0.63	89	YES

* 0.74558 kW / horsepower

^ from application

Potential to emit (at 500 hr/yr)

Pollutant	Factor (gm/hp-hr)	Emissions (gm/hr)	Emissions (lb/hr)	Emissions (tpy)
PM	0.18	15.3	0.03	0.01
NMHC + NOx	3.32	282.2	0.62	0.16
CO	0.8	68	0.15	0.04

1 lb = 453.592 gram

HAPs totals from diesel combusion

	lb/MMBtu	tpy
Benzene	9.33E-04	0.0001
Toluene	4.09E-04	0.0001
Xylenes	2.85E-04	0.0000
Propylene	2.58E-03	0.0004
1,3 Butadiene	3.91E-05	0.0000
Formaldehyde	1.18E-03	0.0002
Acetaldehyde	7.67E-04	0.0001
Acrolein	9.25E-05	0.0000
PAHs	1.68E-04	0.0000
		0.0010

For SO_2, 15 ppm maximum sulfur content of fuel. Assume all sulfur converted to SO_2

Every mole of sulfur will create one mole of sulfur dioxide

$$S + O_2 \text{ ---> } SO_2$$

4.6 gal fuel / hr	15 lb S / 10^6 gal fuel	mol S / 32.065 lb S	mol SO_2 / mol S	64.066 lb SO_2 / mol SO_2	0.00013786	lb/hr SO2
from spec sheet	from NSPS	Assume all sulfur converted to SO_2				

GHGs from Fuel oil combusion

CO_2 EF (kg/MmBtu)	CH_4 EF (kg/MmBtu)	N_2O EF (kg/MmBtu)		
53.06	0.001	0.0001	CO_2e (tpy) =	18.45

CO_2e (tpy) = {[(heat input MmBtu/hr)*(500 hr/yr)*(2.205 lb/kg)]/(2000 lb/ton)}*[(CO_2 EF kg/MmBtu)+(25*CH_4 EF kg/MmBtu)+(298*N_2O EF kg/MmBtu)]

CO_2e calculation has the global warming potentials (GWP) for CH_4 and N_2O incorporated. CH_4 = 25 and N_2O = 298

Emission factors are the default emission factors found in 40 CFR 98 (Greenhouse gas reporting rule), Tables C-1 and C-2.

Spec sheet from Kohler indicates the engine is certified Tier 3

All emission factors from manufacture spec sheet, except for SO2, which is from AP42.

Allowable emissions per engine, 40 CFR 89.112

Pollutant	Standard (gm/kW-hr)	Emissions (gm/hr)	Emissions (lb/hr)	Emissions (tpy)
PM	0.4	25.34972	**0.06**	**0.01**
NMHC + NOx	4.7	297.85921	**0.66**	**0.16**
CO	5.0	316.8715	**0.70**	**0.17**

1 lb = 453.592 gm

CONSTRUCTION PERMIT SUMMARY REPORT

Company Name: AT&T Mobility | File Number: 75-0738 | EPS Initials: JEF

Permit Number(s): 968867P | Source Point Number(s): 01

Application Received (date): 6/20/14 | Application Complete (date): 6/20/14

Air Quality Analysis Performed? Yes☐ No☒

Briefly describe the project: (new source, modifications) (what the process is) (type controls proposed) (emissions expected, qualitative) (replacing what sources) (background information)

This is a new internal combustion diesel-fired engine (85 hp) used for an emergency generator. This emergency engine is subject to NSPS, **Subpart IIII,** Standards of Performance for Stationary Compression Ignition Internal Combustion Engines. Additionally, the engine will meet the engine MACT (40 CFR 63 Subpart ZZZZ) by meeting the NSPS requirements in subpart IIII. This is an area source of hazardous air pollutants, and a minor source for PSD.

The expected emissions from this source are PM, SO_2, CO, VOC, NO_x. Pollution control equipment is not proposed for this source.

Rules Analysis

Title V☐ Cond. Major☐ Minor☒ Source category listed in 1200-03-09-.01(4)(b)1.(i)? Yes☐ No☒

Reason for PSD:	New source above ____ TPY ☐		Sig. increase in ____ emissions ☐		N/A ☒
Applicable NSPS:	40 CFR Part 60, Subpart 4I ☒		State Rule 1200-03-16-. ____ ☐		N/A ☒
Applicable NESHAP:	40 CFR Part 61, Subpart ____ ☐		State Rule 1200-03-11-. ____ ☐		N/A ☒
Applicable NESHAP:	40 CFR Part 63, Subpart 4Z ☒		State Rule 1200-03-31-. ____ ☐		N/A ☒

Other Applicable State Rules

TSP Emissions:	1200-03-	06	-. 02(2) ☒	N/A ☐	NO_x Emissions:	1200-03-	07	-. 07(2) ☒	N/A ☐
SO_2 Emissions:	1200-03-	14	-. 03(5) ☒	N/A ☐	____ Emissions:	1200-03-	____	-. ____ ☐	N/A ☐
CO Emissions:	1200-03-	07	-. 07(2) ☒	N/A ☐	____ Emissions:	1200-03-	____	-. ____ ☐	N/A ☐
VOC Emissions:	1200-03-	07	-. 07(2) ☒	N/A ☐	____ Emissions:	1200-03-	____	-. ____ ☐	N/A ☐

Visible Emissions from	Source	not to exceed 20	% opacity per Method 9	(Rule 1200-03- 05	-. 03(6))
Visible Emissions from	____	not to exceed ____	% opacity per Method ____	(Rule 1200-03- ____	-. ____)
Visible Emissions from	____	not to exceed ____	% opacity per Method ____	(Rule 1200-03- ____	-. ____)

Comments: ____